

New York Power Authority Evaluation of Instrumentation and Dynamic Thermal Ratings for Overhead Lines

Project Description

New York Power Authority (NYPA) and its partners will implement and demonstrate the effects that Dynamic Thermal Circuit Ratings (DTCR) technology can have on areas of the New York State transmission system where there is the potential for wind generation. NYPA will use real-time thermal ratings measurements to correlate increased wind generation and increased transmission capacity, which could defer millions of dollars in capital expenditures on transmission projects. DTCR will be applied to three 230 kV transmission lines: Moses-Willis line spanning 710 feet surrounded by inactive agricultural land and low hayfields near to the town of Massena; Willis-Ryan line spanning 580 feet surrounded by cultivated cropland close to Chateaugay; and Moses-Adirondack line spanning 545 feet in Massena surrounded by permanent pasture and near natural forest and wetland.

Goals/Objectives

- Increase power through existing transmission corridors with minimal investment
- Enhance the ability to dispatch wind power
- Implement DTCR software to calculate ratings based on sensor information for real-time operation
- Conduct side-by-side field trials and evaluations of transmission line sensor systems that monitor overhead transmission line sag, temperature, and local ambient conditions
- Develop best practices to integrate remote sensor data into utility communication and energy management systems

Key Milestones

- Complete Instrumentation Design (September 2010)
- Complete Field Installation (December 2010)
- Complete Modeling of Lines in DTCR software (December 2011)
- Simulated integration of DTCR Ratings Into Systems Operations (January 2013)

Benefits

- Electric costs reduced
- Power reliability increased
- Greenhouse gas emissions decreased
- Clean renewable energy resources



CONTACTS

Ronald Staubly
Project Manager
National Energy Technology Laboratory
3610 Collins Ferry Road
Morgantown, WV 26507-0880
304-285-4828
Ronald.Staubly@netl.doe.gov

Jennifer Mayadas-Dering
Principal Investigator
New York Power Authority
123 Main St
White Plains, NY 10601-3309
914-287-3179
Jennifer.Dering@nypa.gov

PARTNERS

New York Independent System
Operator (NYISO)

New York State Energy Research and
Development Authority

Electric Power Research Institute

PROJECT DURATION

1/1/10–1/31/13

BUDGET

Total Project Value
\$1,440,000

DOE/Non-DOE Share
\$720,000 /\$720,000

EQUIPMENT

Video Sagometer Systems
Thermal Rate Systems
BackScatter Sensor Systems
Weather Stations

DEMONSTRATION STATES

New York

CID: OE0000317

*Managed by the National Energy Technology
Laboratory for the Office of Electricity
Delivery and Energy Reliability*